

THROMBOCYTOPENIA IN PREGNANCY: A PROSPECTIVE STUDY IN A TERTIARY HEALTH CARE FACILITY

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ABSTRACT

Background and Objectives: Thrombocytopenia affects 5-10% of pregnant women and the postpartum period. Thrombocytopenia is described as a platelet count that is lower than the lower limit of normal. Normal pregnancy causes a physiologic decrease in platelet count. The reason for this physiological decline is unknown.

Material and Methods: Women attending antenatal OPD at Govt Medical College, Srikakulam from November 2021 to November 2022 with platelet count less than $150 \times 10^9/L$, regardless of gestational age, were included in this observational study. Thrombocytopenia was identified in 384 pregnant women out of 3500 who were tested on their first antenatal appointment.

Results: 384 women with low platelet count were followed up on till birth and the outcome was evaluated. 42 ladies were not followed up on. Around 52% of the women were between the ages of 21 and 25, and the majority of them had moderate thrombocytopenia. 76.02% of patients were delivered at term, while 47.95% were delivered vaginally. During treatment, 42 women required ICU admission, and the overall death rate was about 4.97%.

Conclusion: Around 52% of the women were between the ages of 21 and 25, and the majority of them had moderate thrombocytopenia. 76.02% of patients were delivered at term, while 47.95% were delivered vaginally. During treatment, 42 women required ICU admission, and the overall death rate was about 4.97%.

Keywords: Thrombocytopenia, pregnancy, prospective study, tertiary health care

INTRODUCTION

Thrombocytopenia occurs in 5-10% of women during pregnancy or during post partum period. Thrombocytopenia can be defined as platelet count less than lower limit of normal i.e. less than $150 \times 10^9 / L$ ¹. The normal range of the platelet count in non-pregnant individuals is $165-415 \times 10^9 / L$. Thrombocytopenia is second only to anaemia as the most common hematologic abnormality during pregnancy²⁻⁵.

There is a physiologic fall in the platelet count in normal pregnancy. The cause of this physiological fall is not known. These changes may reflect dilution, decreased platelet production, or increased platelet turnover during pregnancy³. The overall incidence of thrombocytopenia in pregnancy is 8%, but when patients with obstetric or medical conditions are excluded, the incidence drops to 5.1%⁶⁻⁸.

Table 1: Causes and relative incidence of thrombocytopenia in pregnancy⁴

Causes of thrombocytopenia in pregnancy	Relative incidence
Pregnancy specific	
Isolated thrombocytopenia	
Gestational thrombocytopenia	70-80%
Thrombocytopenia associated with systemic disorders	15-20%
HELLP syndrome	1%
Acute fatty liver of pregnancy	1%
Not pregnancy specific	
Isolated thrombocytopenia	
Primary ITP	1%
Secondary ITP	1%
Drug induced	1%
Type IIb VWD	1%
congenital	1%
Thrombocytopenia associated with systemic disorders	
TTP/HUS	1%
SLE	1%
Anti phospholipid antibody syndrome	1%
Viral infections	1%
Bone marrow disorders	1%
Nutritional deficiency	1%
Splenic sequestration	1%

*Secondary ITP includes isolated thrombocytopenia secondary to some infections (HIV, HCV, H pylori) and to other autoimmune disorders, such as SLE⁹⁻¹¹.

MATERIALS AND METHODS

Study design: Observational study

Study population: Women attending antenatal OPD at Govt Medical College, Srikakulam from November 2021 to November 2022 who have platelet count less than $150 \times 10^9 / L$ irrespective of their gestational age were included in the study.

Sample size: Among 3500 pregnant women who were subjected for testing during their first antenatal visit, 384 women were diagnosed with thrombocytopenia and were included in the study after obtaining informed and written consent and were followed up until delivery. Out of 384 women 42 to were lost to follow up.

RESULTS

Table 2; Age distribution:

Age	No of patients	percentage
<20	84	21.87%

21-25	200	52.08%
26-30	77	20.05%
31-35	19	4.94%
>35	4	1.04%

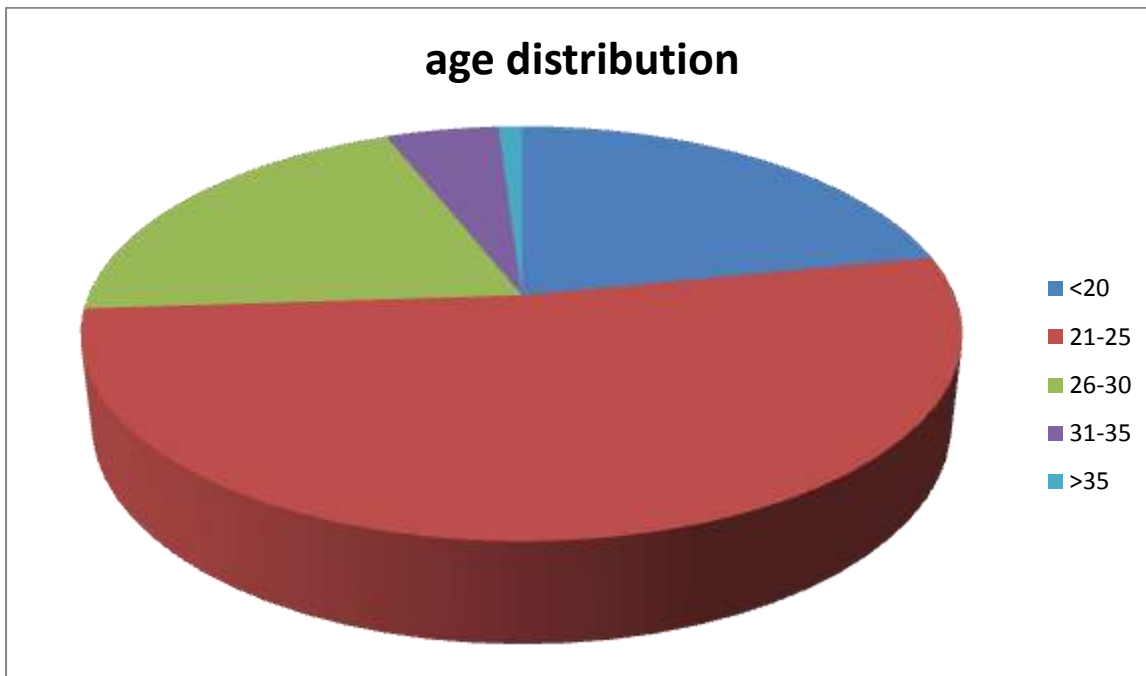


Figure 1: Age Distribution

Table 3; Parity:

Gravida	No of patients	percentage
G1	173	45.05%
G2,G3	200	52.08%
G4 and above	11	2.86%

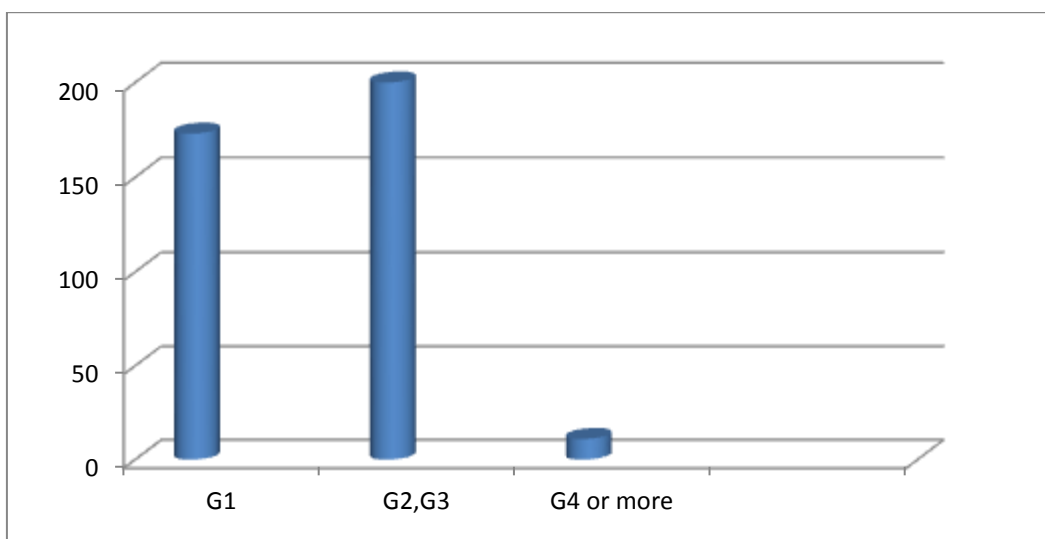


Figure 2: Parity

Table 4: Gestational age at diagnosis:

Gestational age	No of patients	percentage
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<20 weeks	61	15.88%
20-28 weeks	8	2.08%
28-36weeks	165	42.96%
>36weeks	150	39.06%

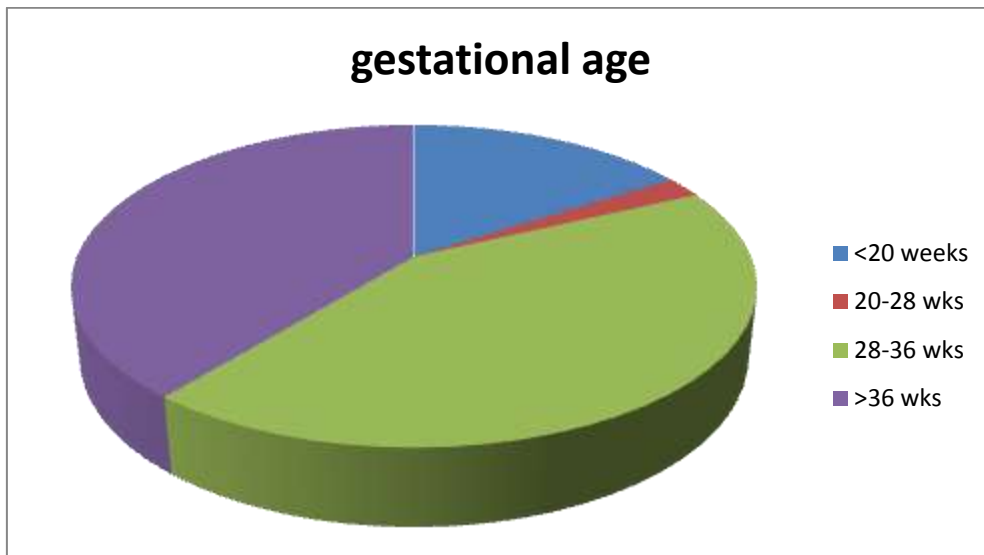


Figure 3: Gestational Age

Table 5: Severity of thrombocytopenia:

Grade	No of patients	percentage
Mild	200	52.08%
Moderate	107	27.86%
Severe	77	20.05%

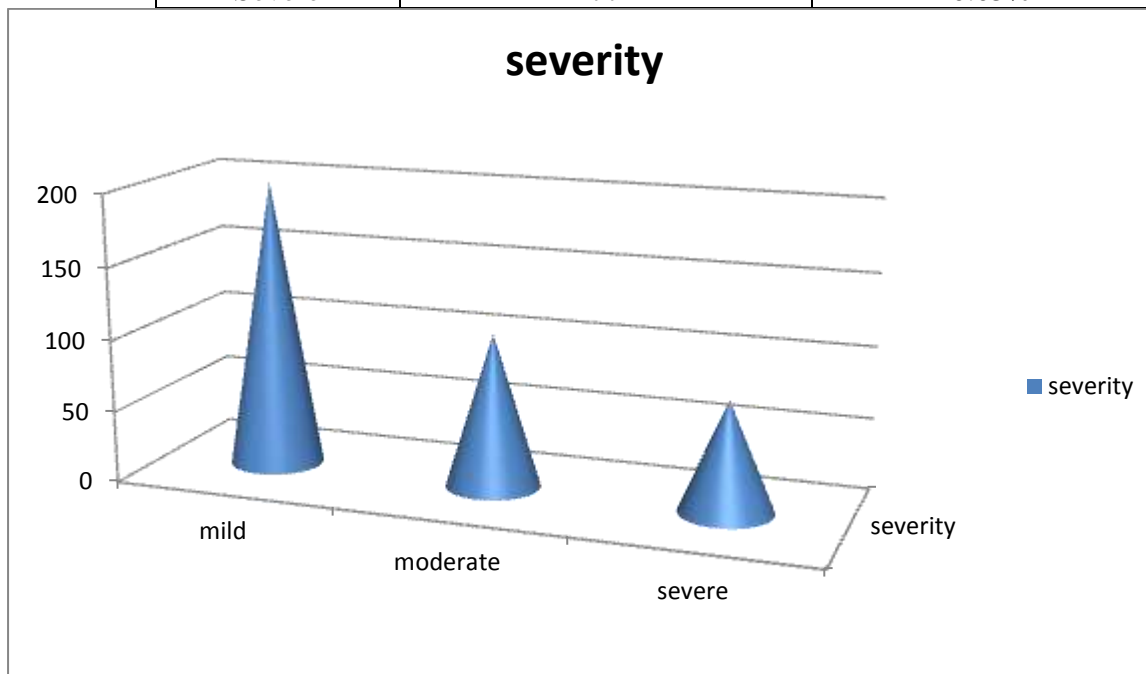


Figure 4: Severity

Table 6: Aetiology of thrombocytopenia in pregnancy:

Aetiology	Number of patients	Percentage
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Gestational thrombocytopenia	150	39.06%
Hypertensive disorders of pregnancy	134	35%
ITP	18	4.6%
Acute/chronic liver dis	17	4.42%
Dengue	27	7.03%
Sepsis & MODS	16	4.16%
Renal disease	12	3.12%
AFLP	6	1.56%
Myelodysplastic syndrome	4	1.04%

Table 7: Blood component transfusion:

Blood component	No of patients required transfusion	%
Platelets	18	4.68%
PRBC	42	10.93%
PRBC+ Platelets	26	6.77%
PRBC + Platelets + FFP	26	6.77%
PRBC + FFP + Albumin	11	2.86%
NO Transfusion	261	68%

Table 8: Gestational age at delivery:

Gestational age	No of patients	%
>37	260	76.02%
32 – 36 wk 6 days	27	7.89%
< 32	55	16.08%

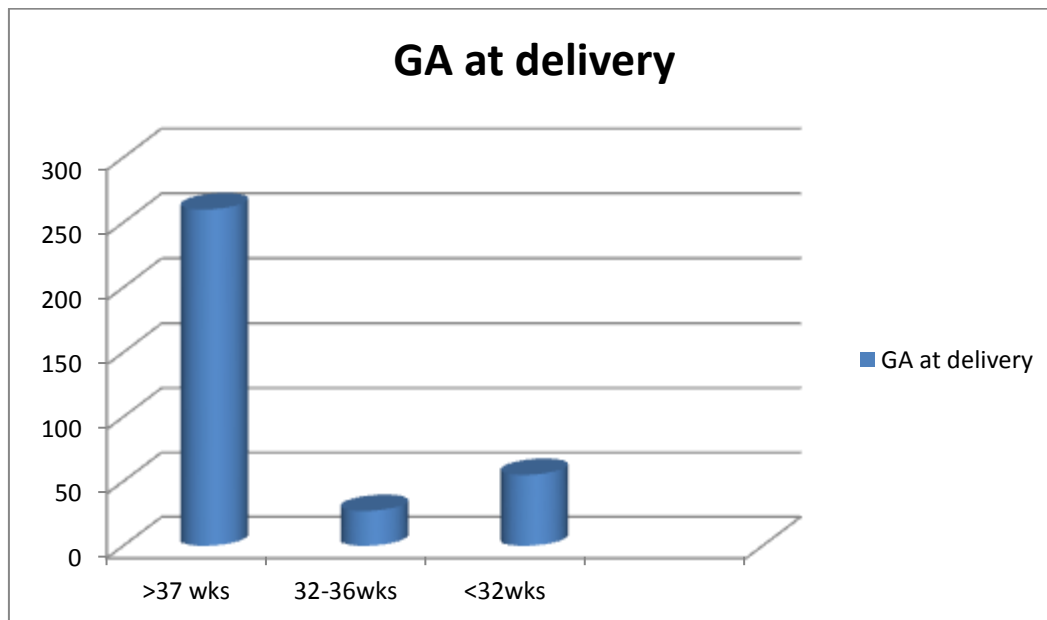


Figure 5: GA at delivery

Table 9: Mode of delivery:

Mode of delivery	No of patients	%
NVD	164	47.95%

LSCS	130	38.01%
MTP/abortion	48	14.03%

Table 10: Maternal morbidity and mortality:

complication	No of patients
ICU admission	42
PPH	17
MODS	21
death	17

Table 11: Birth weight of neonates:

Birth weight	No of patients	%
< 1kg	20	5.26%
1 – 1.5 kg	6	1.75%
1.5 – 2 kg	9	2.63%
2 – 2.5 kg	102	29.82%
>2.5 kg	205	60.05%

DISCUSSION

Researchers in Srikakulam monitored 3,500 pregnant women who were receiving prenatal care at the Government Medical College and Hospital throughout the period beginning in November 2021 and continuing through October 2022. At the first prenatal session, 384 of these women were given the diagnosis of having a low platelet count and were tracked up to the time they gave birth. 42 of the original sample of women, which consisted of a total of 100, could not be located. The majority of women suffer from a mild form of thrombocytopenia, with around 52% of those affected falling into the age group of 21–25. In 76.02 percent of cases, the delivery happened at the full term, and vaginal births occurred in 47.5 percent of those cases. A total of 42 of the women who were treated were admitted to the intensive care unit, and nearly 4.97% of the women who were treated did not survive¹⁰⁻¹².

Thrombocytopenia that is caused by pregnancy is quite common, however it is usually misdiagnosed and inadequately managed. Within this prospective study that lasted for one whole year, there were a total of 856 pregnant women, and one hundred of them had thrombocytopenia. At J. K. Hospital and Research Centre, the purpose of this study was to determine the prevalence of gestational thrombocytopenia among pregnant women who were seeking prenatal treatment for themselves or their unborn child. In this particular study, 11.68 percent of patients had symptoms of thrombocytopenia¹³⁻¹⁵.

This number was significantly higher than the 11.6% and 7.2% that were reported by Boehlen and colleagues and Sainio and colleagues, respectively. It's possible that malaria and dengue fever are to blame for the increased prevalence that this investigation discovered. In contrast to the findings of Mathews and colleagues, the current research did not detect any correlation between the mother's age or religious affiliation and the risk of developing thrombocytopenia during pregnancy. According to the findings of our study, maternal thrombocytopenia develops and is present throughout the entirety of the nine months of pregnancy. No incidences of severe thrombocytopenia were observed during the first trimester of the pregnancy. The study found that the majority of cases of thrombocytopenia (41%) occurred between weeks 30 and 34 of pregnancy, with the subsequent 20% of cases happening between weeks 35 and 39 of pregnancy. According to the findings of Crowther and colleagues, gestational

thrombocytopenia in pregnancy often manifests itself somewhere between the third and fourth month of pregnancy. In contrast, the majority of cases (74.4% in the study by Parnas et al) occurred between weeks 37 and 40 of pregnancy. This was the time period covered by the study¹⁶⁻¹⁹.

In this particular study, there were a total of 100 cases of thrombocytopenia. Out of those, 58 cases were defined as having moderate thrombocytopenia, and 20 cases were diagnosed as having severe thrombocytopenia. The most common cause was gestational thrombocytopenia, which accounted for 44% of all cases. Hypertensive illnesses (including HELLP syndrome) were the second most common cause, at 23%, followed by malaria, which accounted for 21%, and dengue fever, which accounted for 7%. According to a study that was conducted by Parnas M et al.¹, gestational thrombocytopenia is responsible for 59.3% of all occurrences of thrombocytopenia, while hypertensive disorders are responsible for 21.1% of all cases²⁰⁻²³.

CONCLUSION

This study was conducted on 3500 pregnant women attending op in govt medical college, Srikakulam in one year period from Nov 2021 to Nov 2022 during their first antenatal visit 384 women were diagnosed with low platelet count were followed up till delivery and outcome was assessed. 42 women were lost to follow up. Around 52% women were in 21-25 yrs age group, mild thrombocytopenia is observed in most of the women. 76.02% cases delivered at term, 47.95% delivered vaginally. During management 42 women required ICU admission and mortality was nearly 4.97%.

Finding

None

Conflict of Interest

None

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